Summary of Cancer Incidence and Mortality for Zip Codes 29812 (Barnwell, SC), 29817 (Blackville, SC), and 29826 (Elko, SC)

Cancer Incidence in Zip Codes 29812, 29817, and 29826

The first step in the analysis was to look at the number of new cancer cases diagnosed in each zip code and compare this to the number of cancer cases expected in each zip code. This first step determines if there is anything unusual in the observed cancer patterns in the area. The number of "expected" cancer cases is calculated by using state cancer rates and applying them to the population of each zip code.

Cancer incidence analyses could not be performed on zip code 29826 because this zip code has a small population and thus a small number of cancer cases occurring in the zip code. As a general rule, if a particular cancer site has less than 5 cases expected, then it will not be analyzed because below this the numbers are considered too small to be statistically reliable. In zip code 29826, there were a total of 5 cancer cases diagnosed from 1996-1999.

Tables 1 and 3 show what types of cancer were diagnosed in zip codes 29812 and 29817 from 1996-1999. The tables also show how many cases of each type of cancer were expected. In both of these zip codes, fewer cases of cancer occurred than expected. A total of 154 cases occurred in zip code 29812, while 210 cases were expected. In zip code 29817, 80 cases occurred while 102 were expected. In both zip codes, the most common types of cancer were lung, female breast and prostate cancers. These types of cancer are also the most common cancers occurring across all of South Carolina.

The analysis did not reveal any specific types of cancer where the number of cases occurring was significantly higher than expected.

Cancer Deaths in Zip Codes 29812, 29817, and 29826

To assess cancer deaths in these zip codes, cancer mortality data from 1996 through 2000 was used. This is the most current death data available. The same process used to analyze new cancer cases was also used to analyze cancer deaths.

Again, because of the small population and small number of cancer deaths, cancer mortality analyses could not be performed on zip code 29826. A total of 3 cancer deaths occurred in zip code 29826 from 1996-2000.

Tables 2 and 4 show the number of cancer deaths that occurred and the number of cancer deaths expected in zip codes 29812 and 29817. Both zip codes had fewer cancer deaths than expected. A total of 94 cancer deaths occurred in zip code 29812, while 124 cancer deaths were expected. In zip code 29817, there were 59 cancer deaths while 61 were expected.

Statistical analyses did not reveal any specific types of cancer where the number of deaths that occurred was significantly higher than expected.

Conclusions

To summarize, zip codes 29812 and 29817 had fewer cancer cases and cancer deaths than expected. Statistical tests did not reveal any specific types of cancer where the number of cases or deaths that occurred was significantly higher than expected.

In order for a true cancer cluster to exist, the number of cancers occurring must be more than would be expected by chance. Along with statistical testing, there are several other criteria that determine whether a true cancer cluster exists. First, a cancer cluster would more likely involve rarer types of cancer, such as brain, rather than more common cancers, like lung or prostate. Also, a cancer cluster would occur with one specific type of cancer rather than having excesses in several different types of cancer.

Taking all these criteria into consideration, there is no evidence of cancer clustering or of cancers resulting from environmental exposures in zip code 29812 or zip code 29817.

For questions about this report, please contact Laura Sanders at the SC Central Cancer Registry.

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Information on cancer incidence provided by the SC Central Cancer Registry, Office of Public Health Statistics and Information Services, SC Dept. of Health and Environmental Control.

Information on cancer mortality provided by the Division of Biostatistics and the Division of Vital Records, SC Dept. of Health and Environmental Control.

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Table 1. Analysis of New Cancer Cases in Zip Code 29812 (Barnwell), 1996-1999

Cancer Site	Observed No. of Cases	Expected No. of Cases	Observed/Expected	Chi-SquareTest*
Breast (Female)	31	31.4	0.99	0.00
Prostate	23	33.6	0.68	3.36
Lung/Bronchus	19	32.8	0.58	5.83
Bladder	13	8.3	1.57	2.66
Colon/Rectum	11	24.3	0.45	7.30
Melanoma	8	7.2	1.11	0.09
Non-Hodgkin's Lymphoma	5	6.9	0.73	0.52
Kidney/Renal Pelvis	4	5.3	0.75	0.32
Oral/Pharynx	4	6.0	0.67	0.67
Uterus	2	5.1	0.39	1.88
All Sites	154	209.6	0.73	14.75

Excludes in situ cases of cancer to allow for comparison.
Excludes cancer sites with less than 5 cases of cancer expected due to the unreliability of statistical tests based on small numbers.
*The Chi-Square statistical test allows us to determine if the difference between what is observed and what is expected is significant. If the value is greater than 3.84, then we are 95% confident that the observed number of cases is significantly different from the expected number of cases.

Table 2. Analysis of Cancer Deaths in Zip Code 29812 (Barnwell), 1996-2000

Cancer Site	Observed No. of Deaths	Expected No. of Deaths	Observed/Expected	Chi-SquareTest*
Lung/Bronchus	33	35.9	0.92	0.23
Colon/Rectum	10	12.4	0.81	0.46
Breast (Female)	7	9.2	0.76	0.52
Prostate	4	8.7	0.46	2.52
Pancreas	3	6.9	0.44	2.17
All Sites	94	124.0	0.76	7.27

Excludes cancer sites with less than 5 cancer deaths expected due to the unreliability of statistical tests based on small numbers.
*The Chi-Square statistical test allows us to determine if the difference between what is observed and what is expected is significant. If the value is greater than 3.84, then we are 95% confident that the observed number of deaths is signficantly different from the expected number of deaths.

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Table 3. Analysis of New Cancer Cases in Zip Code 29817 (Blackville), 1996-1999

Cancer Site	Observed No. of Cases	Expected No. of Cases	Observed/Expected	Chi-SquareTest*
Lung/Bronchus	14	16.2	0.87	0.29
Breast (Female)	11	15.5	0.71	1.31
Prostate	11	16.0	0.69	1.57
Colon/Rectum	7	11.9	0.59	2.04
All Sites	80	102.2	0.78	4.80

Excludes in situ cases of cancer to allow for comparison.
Excludes cancer sites with less than 5 cases of cancer expected due to the unreliability of statistical tests based on small numbers.
*The Chi-Square statistical test allows us to determine if the difference between what is observed and what is expected is significant. If the value is greater than 3.84, then we are 95% confident that the observed number of cases is significantly different from the expected number of cases.

Table 4. Analysis of Cancer Deaths in Zip Code 29817 (Blackville), 1996-2000

Cancer Site	Observed No. of Deaths	Expected No. of Deaths	Observed/Expected	Chi-SquareTest*
Lung/Bronchus	21	17.7	1.19	0.61
Colon/Rectum	1	6.1	0.16	4.24
All Sites	59	60.9	0.97	0.06

Excludes cancer sites with less than 5 cancer deaths expected due to the unreliability of statistical tests based on small numbers.
*The Chi-Square statistical test allows us to determine if the difference between what is observed and what is expected is significant. If the value is greater than 3.84, then we are 95% confident that the observed number of deaths is signficantly different from the expected number of deaths.

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